

**REMARKS**

This filing is responsive to the final Office Action mailed February 6, 2009, in which claims 1, 2, 8-13, 17, 18, 30-35 and 39-42 were rejected. No claims are amended, and claims 1, 2, 8-13, 17, 18 30-25 and 39-42 are in condition for allowance.

In addition, claims 3-7, 14-16, 19-29 and 36-38 were previously withdrawn from consideration as drawn to a non-elected species. Claims 19-29 are canceled, without prejudice. Withdrawn claims 3-7 and 14-16, which depend from claim 1, are in condition for allowance upon a finding that base claim 1 is patentable. Withdrawn claims 36-38, which depend from claim 30, are in condition for allowance upon a finding that base claim 30 is patentable.

In the Office Action, claims 1, 2, 8-13, 17, 18 30-35 and 39-42 are finally rejected under 35 U.S.C. § 103(a) as obvious over Sato et al., U.S. Pub. No. 2002/0135937, Appl. No. 10/097,566, now U.S. Patent No. 6,728,064 (Sato), in view of Shukh et al., U.S. Pub. No. 2002/0176214, Appl. No. 10/113,988, now U.S. Patent No. 6,954,340 (Shukh). (Office Action, ¶ 1.) Applicants object to the finality of the Office Action because Shukh was not previously of record, the rejection was based on new grounds, and the rejection was not necessitated by Applicant's amendment. See M.P.E.P. § 706.07(a) ("...actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims, nor based on information [on the record]"). In particular, the relevant amendment specifies that "the magnetoresistive sensor is located between the write pole tip and the trailing edge," and this limitation should reasonably have been expected to be claimed because the claims already recite "a magnetoresistive sensor formed adjacent the write element, on an opposite side of the write element from the substrate," and the opposite side of the write element is between the write pole tip and the trailing edge, as pointed out in the amendment. See *Id.* ("A second or any subsequent action on the merits in any application or patent involved in reexamination proceedings should not be made final if it includes a rejection, on prior art not of record, of any claim amended to include limitations which should reasonably have been expected to be claimed.").

In any case, there is no prima facie case of obviousness because Sato and Shukh do not teach nor suggest the invention described in Applicants' claims. M.P.E.P. § 2143.03 ("All Claim Limitations Must Be Considered;" "All words in a claim must be considered in judging the patentability of that claim against the prior art.") (citing *In re Wilson*, 424 F.2d 1382, 1385 (C.C.P.A. 1970)). In particular, each of independent claims 1, 12, 30 and 34 requires a read/write head having a substrate and a write element formed adjacent or proximate the substrate. (Application, claims 1, 12, 30 34.) In rejecting these claims, the Office Action identifies reference 17 of Sato as "substrate (17)," but reference 17 is a top protective layer, not a substrate. Sato, ¶ 83 ("The thin-film magnetic head further comprises a protective layer 17 made of a non-conductive and non-magnetic material such as alumina and formed to cover the second magnetic layer 14."); see also ¶¶ 151, 186. Conversely, Sato explicitly identifies the substrate as "substrate 1," not "protective layer 17." Sato, ¶ 72 ("a substrate 1 made of a ceramic material such as aluminum oxide and titanium carbide ( $\text{Al}_2\text{O}_3\text{TiC}$ )").

FIG. 1 of Sato (reproduced below) clearly illustrates this distinction. As shown in FIG. 1, "a thin film magnetic head" is formed on substrate 1, and the magnetic head is then covered by top protective layer 17. In particular, the write elements identified by the Office Action (second magnetic layer 14, pole portion layer 14A, yoke portion layer 14B, and coupling portion 14C) are not formed adjacent or proximate substrate 1, as claimed by Applicants' claims, but instead are separated from substrate 1 by (at least) insulating layer 2, bottom shield layer 3, MR element 5 with insulating layer 4, top shield layer 6 and non-magnetic layer 7. Thus there is no prima facie case of obviousness under 35 U.S.C. § 103(a), and claims 1, 12, 30 and 34 are allowable. See also Sato, FIGS. 2, 3 (identifying media traveling direction T at ¶ 95); FIGS. 5, 6, 20, 21.

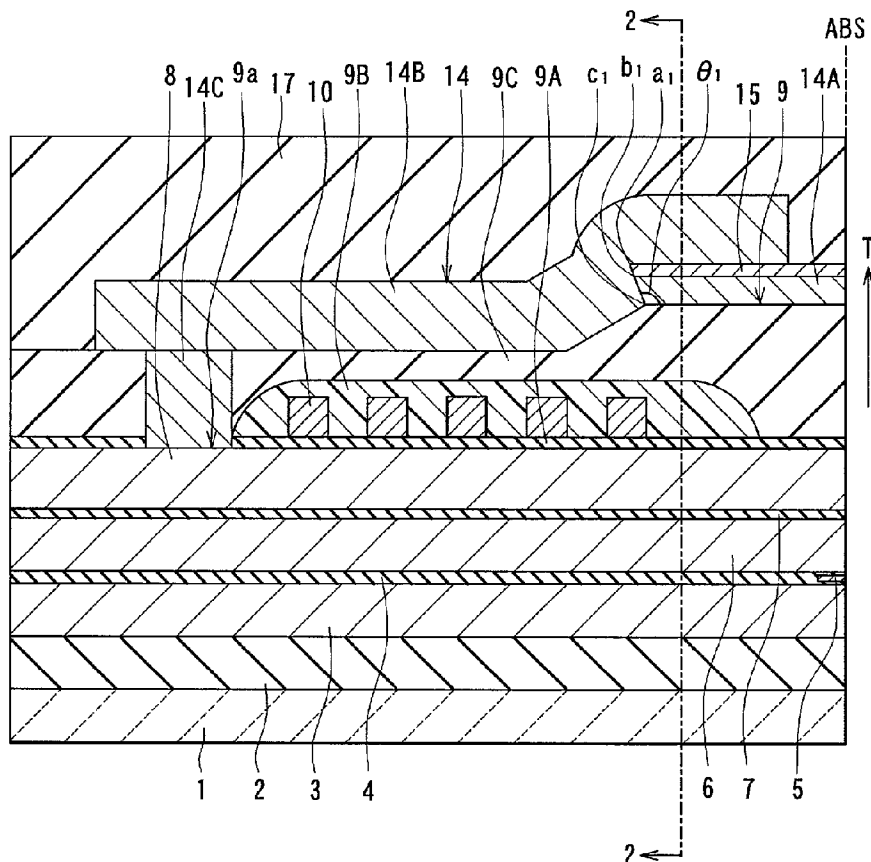


FIG. 1

Sato's description of FIG. 1 is consistent with the use of the terms "substrate" and "coating" as known in the art of thin film read/write head manufacture, and inconsistent with the Office Action interpretation. In particular, substrate 1 is the material upon which the head is fabricated, not protective coating 17. See, e.g., Wikipedia, Substrate ("in wafer (electronics) and thin films, the material upon which semiconductor devices are fabricated," at <http://en.wikipedia.org/wiki/Substrate>) (referenced March 6, 2009; included). Compare to Sato, ¶¶ 132–149 (describing the formation of insulating layer 2 on substrate 1, followed by bottom (read) shield layer 3, insulating layer 4, MR element 5, top (read) shield layer 6, non-magnetic layer 7, first magnetic layer 8, insulating layers 9A and 9B, coil layer 10, pole portion layer 14A, yoke portion layer 14B, coupling portion 14C and non-magnetic layer 15).

Similarly, Sato describes protective coating 17 as a final protective coating layer that covers the head structure, not a substrate on which the head is formed. See, e.g., Compact Oxford English Dictionary, coating (“a thin layer or covering,” at <http://www.askoxford.com/dictionaries/>) (referenced March 6, 2009; included); compare Sato, ¶ 151 (“then, as shown in FIG. 1, the protective layer 17 is formed to cover the second magnetic layer 14”). (See also Specification, p. 3, ll. 10–12, 19–21; p. 15, ll. 5–7; FIGS. 2, 3 (showing read/write elements formed on substrates 52 and 104, respectively).)

There is, moreover, no evidence in the record to explain why a person of ordinary skill in the art would identify protective layer 17 as a substrate. M.P.E.P. § 2112 (“To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’”) (citing *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999)). To the contrary, Sato teaches that protective layer 17 (and equivalents 17A, 17B; see Sato, ¶ 160) *cannot* be substrates, because the protective layers appear in figures that explicitly *do not* show the substrate. See, e.g., FIGS. 18, 19 (showing protective layer 17A); contrast Sato, ¶¶ 161–63 (“in FIG. 18 and FIG. 19, the substrate 1 to the non-magnetic layer 7 are not shown”).

The key to supporting a rejection under 35 U.S.C. 103 is a clear articulation of the reason(s) why the claimed invention would have been obvious. M.P.E.P. § 2142. Here, however, the Office Action misidentifies Sato’s protective coating (17) as a substrate, and there is no articulated reasoning or rational basis to support a legal conclusion of obviousness based on this interpretation. See M.P.E.P. § 2141 “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (citing *K.S.R. Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007)). Thus claims 1, 12, 30 and 34 are not obvious under 35 U.S.C. § 103(a).

Because Sato’s protective layer 17 is not a substrate, the combination of Sato and Shukh also fails to teach or suggest additional claim limitations, and in fact teaches away from Applicants’ invention as claimed. In particular, Applicants claim “a magnetoresistive sensor formed adjacent the write element, on an opposite side of the write element from the substrate” (claims 1,

12, 30, 34), while FIG. 1 of Sato shows MR sensor 5 on the *same* side as substrate 1; that is, *in between* substrate 1 and the write elements (e.g., pole portion layer 14A, yoke portion layer 14B, coupling portion 14C or non-magnetic layer 15). M.P.E.P. § 2141.02 (“A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.”) (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 (Fed. Cir. 1983)). Similarly, Applicants claim that “a distance between the write pole tip and the substrate is less than a distance between the [write] shield and the substrate” (claims 1, 30). Sato’s FIG. 1, on the other hand, shows that the distance between pole portion layer 14A (the write pole tip) and substrate 1 is *greater than* the distance between top shield layer 6 and substrate 1. Nor does either Sato or Shukh teach or suggest limitations regarding a distance to the soft underlayer, as recited in claims 7, 12 and 34.

Applicants’ claims 1, 12, 30 and 34 define over the prior art, and are in condition for allowance. Claims 2, 8–11, 13, 17, 18, 31–33, 35 and 39–42 are also condition for allowance, as dependent upon allowable claims 1 and 30. In addition, previously withdrawn claims 3–7, 14–16, and 36–38 are also allowable upon a finding that base claims 1 and 30 are patentable. Thus each of pending claims 1–18 and 30–42 is in condition for allowance, and notice to that effect is requested. The Commissioner is authorized to charge any additional fees associated with this paper, or credit any overpayment, to Deposit Account No. 11-0982.

Respectfully submitted,

KINNEY & LANGE, P.A.

Date: April 6, 2009

By: /Nathaniel P. Longley/  
Nathaniel P. Longley, Reg. No. 62,668  
THE KINNEY & LANGE BUILDING  
312 South Third Street  
Minneapolis, MN 55415-1002  
Telephone: (612) 339-1863  
Fax: (612) 339-6580

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